

JC08 Rec'd PCT/PTO 26 APR 2001

Please reply to Perth office

July 26, 2000

Our Ref: P15548PCAU RHB:JAM

Commissioner of Patents
IP Australia

Dear Sir,

Re: Patent in International PCT Application No. PCT/AU99/00922 by
Bains Harding Limited

We refer to the Written Opinion, which issued upon the above application on 20 July 2000.

We request that pages 3 and 19 be replaced with pages 3 and 19 as enclosed herewith in duplicate.

The amended claim 1 specifies that the longitudinally extending contacting surfaces of the module are the relevant surfaces including a portion formed by a portion of one of the insulating layers. As this amendment, also reflected in the pertinent Statement of Invention at page 3, addresses the Examiner's concerns, we include no submissions on the citation.

Favourable reconsideration of the application is respectfully requested.

Yours respectfully,
WATERMARK

Richard H Baddeley

Enc

Patent and
Trade Mark Attorneys
in Australia
and New Zealand
Established 1859

Principals

Richard Baddeley BE (Chem) (Hons)
Michael Chin Quan BE (Hons) M Eng Sc
Peter Franke BSc LLB
Louis Gebhardt BSc
Carolyn Harris BSc (Hons)
Stephen Plymin BE (Mech)
Christian Schieber Dipl-Ing
(M Aero & Space Tech Eng) European Patent Attorney
Ian Scott Dip App Chem
Karen Sinclair BSc
Richard Smoorenburg BE (Electronic)

Paul Fong B Eng (Comp Sys)
Amanda Jones B App Sc Dip IP Law
Kathy Leviton BSc (Analytical Science) (Hons)
Scott Martin BE (Mech)
Susan McCausland BE (Elec) (Hons)
Carolyn Rolls BSc (Hons) Ph D Dip IP Law
Roger Sym BE (Materials)
Ray Tettman BE (Elec) Grad Dip Mgt

Richie Paul BA (Chem) Ph D
European Patent Attorney only

Melbourne

The Glasshouse
290 Burwood Road Hawthorn
Victoria 3122 Australia
Postal address:
Locked Bag 5 Hawthorn
Victoria 3122 Australia
Telephone +613 9819 1664
Facsimile +613 9819 6010

Sydney

Unit 1 The Village
Riverside Corporate Park
39-117 Delhi Road North Ryde
New South Wales 2113 Australia
Telephone +612 9888 6600
Facsimile +612 9888 7600

Perth

4th Floor Durack Centre
263 Adelaide Terrace Perth
Western Australia 6000 Australia
Telephone +618 9325 1900
Facsimile +618 9325 4463

Email

mail@watermark.com.au
Internet
www.watermark.com.au



Please reply to Perth office

JC08 Rec'd PCT/PTO 26 APR 2001

June 29, 2000

Our Ref: P15548PCAU RHB:JAM

Commissioner of Patents
IP Australia

Dear Sir,

Re: Patent in International PCT Application No. PCT/AU99/00922 by
Bains Harding Limited

We refer to the Written Opinion which issued upon the above application on 10 May 2000.

Amendments

We request that pages 3 and 19 be replaced by pages 3 and 19 as enclosed herewith in duplicate. The object of the amendment is to recite the feature in claim 1 (and the corresponding statement of invention) that the contacting surfaces of the module have portion formed by a portion of at least one of the first inner insulation layer and the second outer insulation layer. Clear support for this is provided by the drawings.

Distinguishing the References

GB 2296749

This module is readily distinguished. As the abstract says:

"..... each insulating element 1 comprises a curved external covering 2, especially a sheet of metal or plastics material, having flanged edges 4, 5 and containing rigid foam 3 provided on its joint surface with a layer of flexible foam."

thus, the contacting surfaces do not incorporate any portion of the insulating layers 4" and 3. Indeed, the requirement of flanged surfaces (of cladding) and a covering layer of flexible foam results in a more complex construction that is avoided by the present invention.

Patent and
Trade Mark Attorneys
in Australia
and New Zealand
Established 1859

Principals

Richard Baddeley BE (Chem) (Hons)
Michael Chin Quan BE (Hons) M Eng Sc
Peter Franke BSc LL B
Louis Gebhardt BSc
Carolyn Harris BSc (Hons)
Philip Macken BSc (Chem) LL B
Stephen Plymin BE (Mech)
Christian Schieber Dipl-Ing
(M Aero & Space Tech Eng) European Patent Attorney
Ian Scott Dip App Chem
Karen Sinclair BSc
Richard Smoorenburg BE (Electronic)

Paul Fong B Eng (Comp Sys)
Amanda Jones B App Sc Dip IP Law
Kathy Leviton BSc (Analytical Science) (Hons)
Scott Martin BE (Mech)
Susan McCausland BE (Elec) (Hons)
Carolyn Rolis BSc (Hons) Ph D Dip IP Law
Roger Syn BE (Materials)
Ray Tettman BE (Elec) Grad Dip Mgt

Richie Paul BA (Chem) Ph D
European Patent Attorney only

Melbourne

The Glasshouse
290 Burwood Road Hawthorn
Victoria 3122 Australia
Postal address:
Locked Bag 5 Hawthorn
Victoria 3122 Australia
Telephone +613 9819 1664
Facsimile +613 9819 6010

Sydney

Unit 1 The Village
Riverside Corporate Park
39-117 Delhi Road North Ryde
New South Wales 2113 Australia
Telephone +612 9888 6600
Facsimile +612 9888 7600

Perth

4th Floor Durack Centre
263 Adelaide Terrace Perth
Western Australia 6000 Australia
Telephone +618 9325 1900
Facsimile +618 9325 4463

Email

mail@watermark.com.au
Internet
www.watermark.com.au

EP 297212

These products are directed at non-cryogenic insulation, which is a totally distinct art to that of cryogenic insulation. It is no part of the present invention to absorb water within the insulation. In cryogenics, water vapour ingress means ice formation and deterioration in insulation efficiency. Accordingly, the reference teaches away from cryogenic insulation. Please also note that current claims expressly recite that the inner insulation layer have suitable thermal shock characteristic for cryogenic conditions, a parameter not necessary in the citation.

Derwent 1997-035858

Similar arguments apply to this reference which is directed to insulation of domestic piping, a non-cryogenic application. The construction is simply not suitable for cryogenic applications so it constitutes teaching away from the present invention.

Clarity Issue

The question of "suitable thermal shock characteristic under cryogenic conditions". The thermal shock undergone by insulation under cryogenic conditions is a known issue. The specification provides general description of suitable materials at page 3, lines 15 to 22. A more detailed discussion follows at page 8, line 23 to page 9, line 5.

In view of this, the usage is submitted to be clear.

Conclusion

Favourable reconsideration of the application is respectfully requested.

Yours respectfully,
WATERMARK

Richard H Baddeley

- (b) at least one second outer insulation layer disposed radially outwardly of said inner insulation layer;
- (c) at least one water vapour barrier layer; and
- (d) a cladding layer,

5 wherein said longitudinally extending contacting surfaces include a portion formed by a portion of at least one of said first inner insulation layer and said second outer insulation layer.

By pre-formed is meant that the insulation module may be manufactured, as a complete insulating article, prior to transfer to, and installation at, a factory
10 site. The factory site may be very remote to the site where installation will take place. Such pre-fabrication of modules, which may be installed directly at the site, saves significant site costs and reduces the cost of the insulation project.

The pre-formed module may be made up of any desired number of insulating layer(s) and any desired number of cladding layer(s) though minimising
15 the number of layers will facilitate accurate fabrication. Each layer is of nature and thickness appropriate to the application.

The insulating layers must firstly include, proximate the insulated component, and most advantageously in contact with it, at least one first inner insulation layer of an insulation material, ideally a polymeric foam which retains
20 flexibility and does not embrittle at cryogenic temperatures. Such foam layer accommodates thermal expansion/contraction behaviour of the insulated component and must therefore have appropriate thermal shock characteristics at cryogenic temperatures. Exemplary of such an insulating material is a polyimide foam.

25 Further second layer(s) of insulating materials of same or different nature from the first layer(s) may be employed radially outwardly from the first insulation layer. Polyisocyanurate resin (PIR), polyurethane or possibly other polymer foams, which may be harder than the first layer, may be employed for such further layers. Five or more such insulation layers may be provided, three or more of
30 which may be formed of a polymeric foam. More advantageously, one or more of the insulation layers may be formed integral to facilitate fabrication. For example, the layers radially outwardly disposed from the inner insulation layer may be integrated to reduce the number of layers of insulation. Typically, the PIR or polyurethane foam layer may be

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A pre-formed insulation module for insulating a process component having opposed longitudinally extending contacting surfaces extending along a length thereof and terminal contacting surfaces at each end thereof comprising:

- (a) at least one first inner insulation layer being constituted of an insulation material having suitable thermal shock characteristic under cryogenic conditions and having one surface proximate to a surface of a component to be insulated,
- (b) at least one second outer insulation layer disposed radially outwardly of said inner insulation layer;
- (c) at least one water vapour barrier layer; and
- (d) a cladding layer,

wherein said longitudinally extending contacting surfaces include a portion formed by a portion of at least one of said first inner insulation layer and said second outer insulation layer.

2. The module of claim 1 including connection means for connecting said module to a further adjacent such module for insulating said component.

3. The module of claim 2 wherein said connection means are circumferentially and longitudinally disposed relative to a longitudinal axis of said module.

4. The module of claim 3 wherein said circumferentially disposed connection means are formed in the terminal contacting surfaces and the longitudinally disposed connection means are formed in said longitudinally extending surfaces.

5. The module of claim 3 or 4 wherein said connection means are tongue and groove joints, complementary joints being formed at each end of the module.